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OILTEST inc
MARINE SERVICES

February 4, 2014.

To: Horizon Lines
Attn.: Mr. Jim Belviso

Subject: Vessel "MV Horizon Kodiak" - T14031003

Please find the following our laboratory analysis report for:

Vessel	: MV Horizon Kodiak
Bunker Date	: 01/29/2014
Received on	: 01/31/2014
Port	: Tacoma WA
Fuel Grade	: IFO
Supplier	: Phillips 66
Seal Number	: 36285766

We have carried out "Toluene Insoluble's Analysis"/ FT-IR on the sample and results as follow:

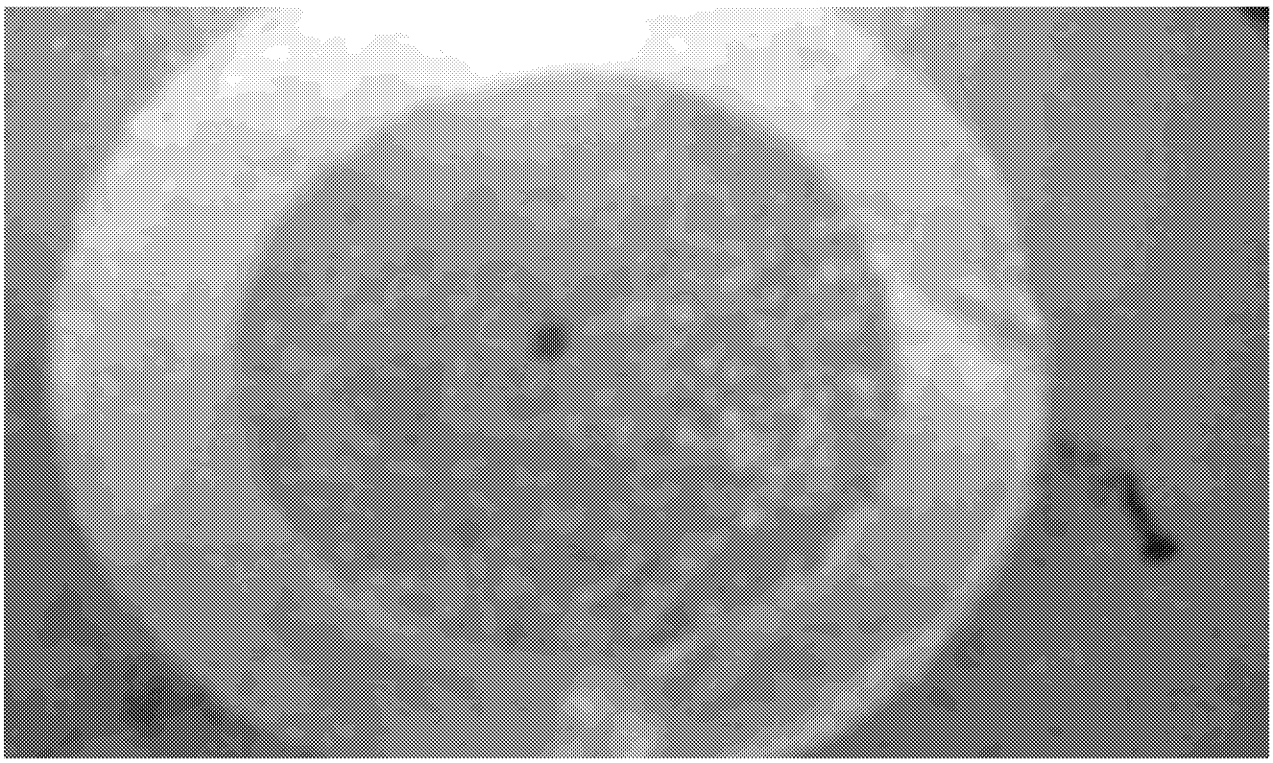
Two type of filtration are used in this process:

1- Low density filtration = ND
2- High density filtration* = Heavy amount (0.20% V/V)

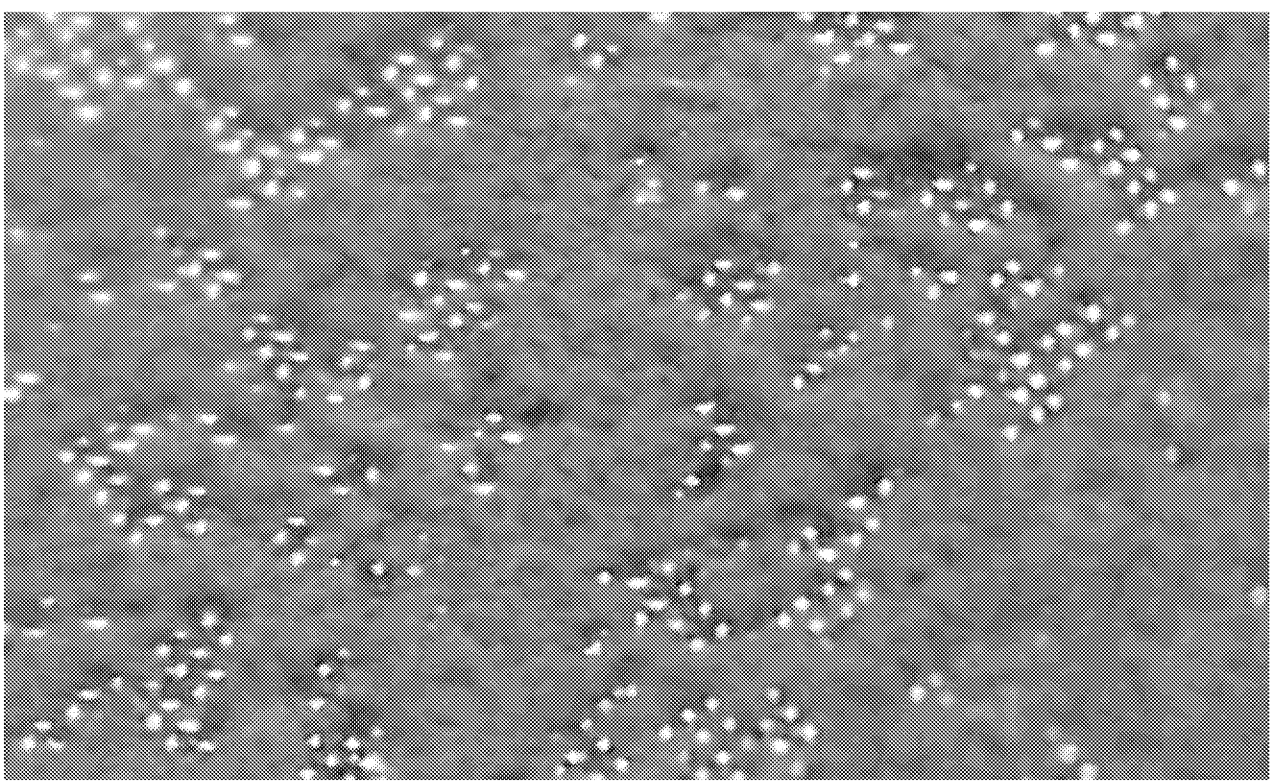
FTIR analysis on the "Toluene Insoluble" identify the materials as High Density Polyethylene.

*High density polymer present in high density filtration can be separated by centrifuge.

The procedure that we use for testing for polymers in marine bunker fuel oil is our Internal Draft Method: OTI101-02.
Method: OTI101-02 is specifically used for the isolation of low density and high density components from fuel oil by specialized separation techniques categorizing in the; light, moderate, and heavy modes by digital microscopy and identification by Fourier transform infrared spectroscopy.



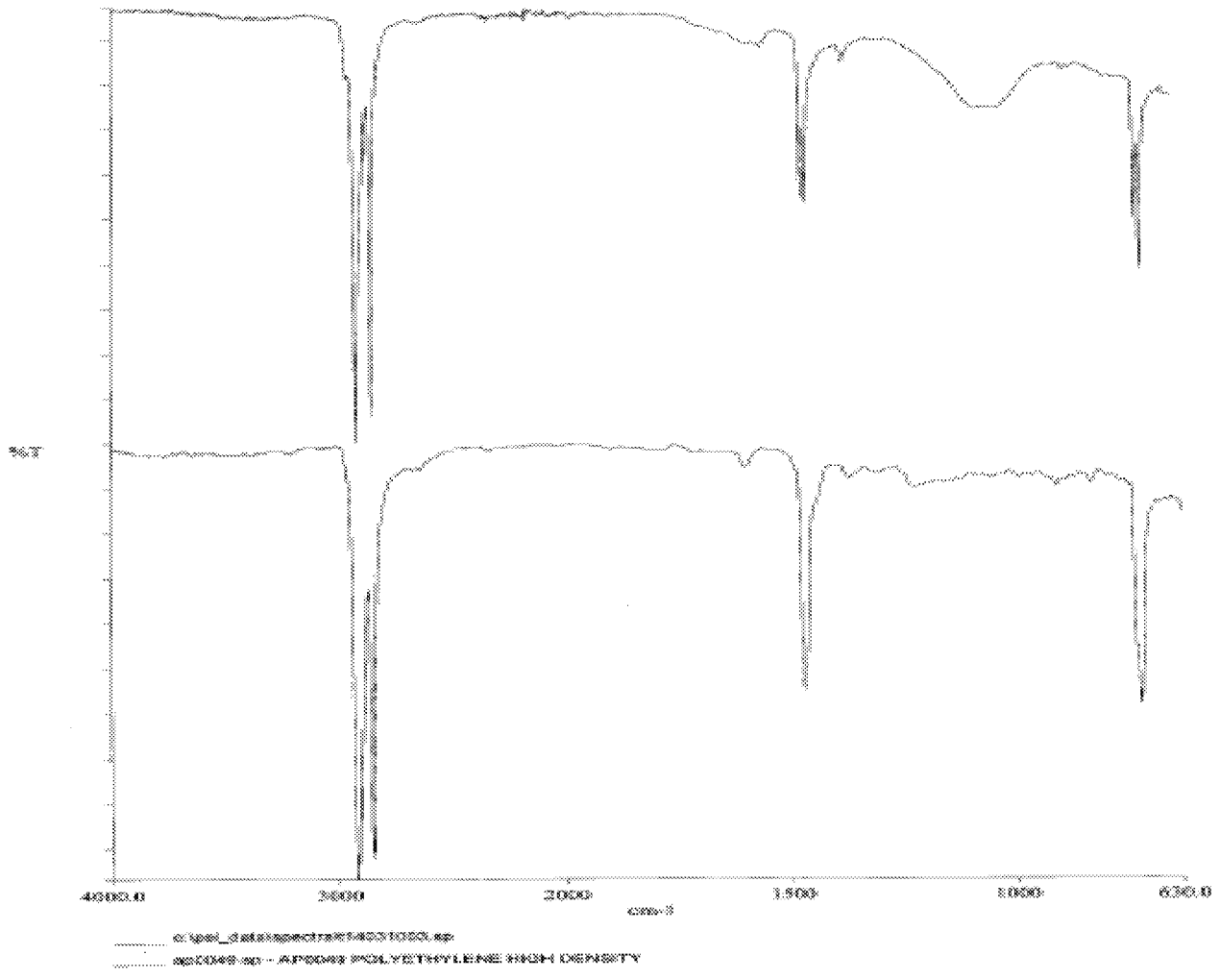
High Density Filtration under microscope 10X



High Density Filtration under microscope 60X

Toluene Insoluble has been examined under the microscope and FTIR analysis indicate the presence of polymer.

FTIR Spectrum,



Regards,

Wajdi Abdmessih
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